

What is claimed is:

1. A display device for displaying images in response to image and control signals, comprising:

a display surface through which input light is applied from an external object;

5 a color filter having color pixels that are arranged to form a planar surface substantially parallel with the display surface; and

a substrate having at least one light sensing portion disposed to face corresponding one of the color pixels, the at least one light sensing portion sensing light provided through the corresponding color pixel.

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2. The display device of claim 1, further including a liquid crystal layer disposed between the color filter and the substrate.

3. The display device of claim 1, wherein the corresponding color pixel is a
15 red color pixel so that red light is provided to the at least one light sensing portion through the red color pixel.

4. The display device of claim 3, wherein the red light has a wavelength in a range from about 600nm to about 700nm.

5. The display device of claim 3, wherein the input light provided from the external object is white light.

5 6. The display device of claim 1, wherein the input light provided from the external object is red light having a wavelength in a range from about 600nm to about 700nm.

7. The display device of claim 1, wherein the substrate further includes a plurality of pixel portions arranged in a matrix form to display images in accordance with the image and control signals.

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8. The display device of claim 7, wherein the at least one light sensing portion includes multiple light sensing portions each of which is disposed at an area having a selected number of the pixel portions.

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9. The display device of claim 8, wherein a number of the light sensing portions is smaller than a number of the pixel portions in a unit area.

10. The display device of claim 8, wherein the light sensing portions each have a size smaller than a size of the respective pixel portions.

11. The display device of claim 7, wherein the pixel portions each include:

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a gate line providing a gate signal;

a data line providing an image data signal; and

a first switching member having a conduction path between the data line and a pixel electrode disposed on the substrate, the first switching member being controlled by the gate signal.

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12. The display device of claim 1, wherein the at least one light sensing portion includes:

a second switching member controlled by the light provided through the corresponding color pixel, the second switching member generating a first signal in response to the light;

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a first sensing line electrically connected to the second switching member; and

a third switching member controlled by a second signal provided via a gate line, the third switching member transferring the first signal from the second switching member to a second sensing line in response to the second signal.

13. The display device of claim 12, wherein the second switching member is a transistor including:

gate and source electrodes commonly connected to the first sensing line; and

5 a drain electrode connected to the third switching member.

14. The display device of claim 13, wherein the third switching member is a transistor including:

a gate electrode connected to the gate line; and

10 a conduction path connected between the second switching member and the second sensing line.

15 15. The display device of claim 14, wherein the data line and the gate line are connected to a first switching member of a pixel portion to display an image, the first signal being provided to the first switching member as a data driving signal and the second signal being provided to the first switching member as a gate driving signal.

16. The display device of claim 14, wherein the first sensing line is disposed in a direction substantially parallel with the gate line, and the second sensing line is disposed in a direction substantially parallel with the data line.

5 17. The display device of claim 1, wherein the external object is a light pen having a light emitting diode to generate the input light.